

REMARKS/ARGUMENTS

Claims 1-14 remain in this application for examination.

Drawings:

Applicants have amended Fig. 1 of the drawings to show that the contact surfaces 13 are off-set from the fluid connections 10 and has amended Figs. 1 and 2 to add reference numerals 10b, 25 and 26 for structure recited in the claims.

Claim Rejections Under 35 U.S.C.112:

The Examiner has rejected Applicant's claims 1-14 under 35 U.S.C. §112, first paragraph. Applicants respectfully traverse this rejection.

According to the Examiner, claims 1-14 have been rejected under 35 U.S.C §112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully traverse this rejection. The Examiner then broadly states that the description is directed toward an amorphous concept in which the technology can be used with various microcomponents and the electrical contact surfaces can be used for measuring, heating, cooling, etc. According to the Examiner, the disclosure does not describe how the invention works and how the electrical contact surfaces interact with the fluid lines. Applicants respectfully submit that page 1 of the application clearly sets forth the Field of the Invention which is an interconnection support for plate-like microcomponents. Microcomponents are described as follows:

plate-like microcomponents, such as micromixers, micropumps, microvalves or the like, serve for carrying out chemical reactions with extremely small mask flow rates. The use of microcomponents enables precise temperature control and good mixing, enabling significantly more accurate process control at the same time as increased safety.

To one skilled in the art, the Field of the Invention is clearly adequately set forth. In the third paragraph, the microcomponents are clearly described as plurality of plain-parallel plates lying one on top of the other which contains structures in their surfaces lying one on top of the other which are

necessary for the "requisite function."

With respect to the Examiners position that it is unclear how the electrical contact surfaces 13 work and how they interact with the fluid lines. The Examiner's attention is directed to the drawings, specifically, Fig. 2, where there are electrical contact surfaces 13 on the vertical lead extending rail 15. There is no interaction between the electrical contact surfaces 13 and the fluid connection 10a.

With respect to the remainder of the Examiner's rejection and objection to Applicant's claims, Applicants express their sincere appreciation for the Examiner's observations with respect to indefiniteness and Applicants have amended the claims so as to clarify what is being claimed. For example, in independent claims 1 and 9, the fluid line connections 10 and the associated connections 11 in the microcomponents are being claimed. The electrical contact surfaces 13 and associated contacts 14 are then claimed in dependent claims 4 and 11. The remainder of the amendments to Applicants' claims further clarify Applicants' claims. These claims have been very carefully reviewed and it is now felt that these claims now comply with 35U.S.C. §112, first and second paragraphs mainly because terms, which appear to be all encompassing, have now been more specifically targeted to structure in that there are now distinctly claimed fluid line connections and distinctly electrical contact surfaces.

Claim Rejections Under 35 U.S.C. §102:

Claim 1 has been rejected under 35 U.S.C. §102(b) as being anticipated by Miyake et al. '635 or Burd '129 or Längström, EP'186, while claims 3 and 8 are rejected under 35 U.S.C. §102(b) as anticipated by Burd '129 alone. Applicants respectfully traverse these rejections.

A difference between the claimed invention and Miyake et al. '635, Burd '129 and Längström, EP'186 is that these references each fail to teach or suggest the following limitations in independent claims 1 and 12:

. . . an unobstructed insert slot (4) . . . an insertion edge portion (5) wherein the insertion edge portion (5) has substantially flush fluid connections (11) therein . . . [(which flush fluid connections (11)] facilitate sliding the first insertion edge portion (5) of the plate-like microcomponents (1) into the slot (4).

These limitations establish a fluid connection between external fluid lines (10b) and holes (11) in the outside surface of the microcomponent (1) upon insertion into the insertion slot (4). This way of quickly and easily establishing the required connections is possible because the insertion slot is unobstructed and the plate-like microcomponent is without protrusions or outward-positioned connection elements. Consequently, the plate-like microcomponents can be inserted without need for prior removal of or displacement of additional mounting parts, requiring subsequent reattachment of the additional mounting parts.

None of the applied references have the possibility of allowing simple push-in of a microcomponent. In the references, the microcomponents have connection elements that project above the outside surface and make it impossible to simply push the microcomponent into whatever structure is designated the receiving structure.

When connecting a microcomponent in any of the interconnecting supports as described in cited prior art, it is necessary to manually connect external fluid lines with projecting connection elements on the outside surface of the microcomponents, making the process of connecting or changing a fragile microcomponent a time consuming and tedious job. According to the claimed invention, the external fluid lines can be connected to the support rail independently of and before pushing-in the microcomponent. No further connection process is required. Only in case of high pressure being applied when transferring fluid into and out of the microcomponent might it be advantageous to afterwards secure the connection as described on page 5, first full paragraph.

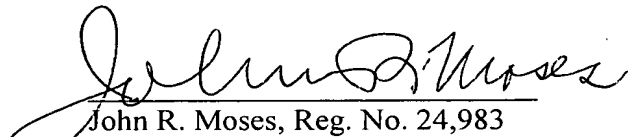
Considering each reference individually, the analytical units 11, 12 and 13 of Miyake et al. '635, said by the Examiner to correspond to Applicants' plate-like microcomponent 1, projections 1101, 1102 and 1103, respectively (see Figs. 2 and 4). Moreover, as is seen in Fig. 1, the couplings with which the projections 1101-1103 connect project into the space, considered by the Examiner to correspond to Applicants' claimed unobstructed slot 4. Burd '129 shows projections at 27 and 26 on capillary tube cartridge 10 and projections which divide the slot of support block 13 into recesses 24 and 25. Consequently, the slot of Burd '129 does not have planar walls. Längström, EP'186 shows projections 14 and 16 on coupling plate 21, which in Figs. 4 and 5 are not within the slots 23 provided in the box like structure 1 of Längström, EP'186. In Fig. 6 Längström, EP'186, the connections 14 and 16 are also not within the slots. Accordingly, it is respectfully requested that

these rejections under 35 U.S.C. §102(b) be withdrawn in that 102(b) requires every claimed limitation be within a single, uncombined reference.

In that this is a full and complete response to the Office Action of July 19, 2004, this application is now in condition for allowance. If the Examiner for any reason feels a personal conference with Applicants' attorneys might expedite prosecution of this application, the Examiner is respectfully requested to telephone the undersigned locally.

No fee is believed to be due, however the Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,


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In the drawings:

Applicant proposes to amend the drawings as shown in red on the attached copies of Figs. 1 and 2.